

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/685,771
Attorney Docket No. Q60938

that numbered paragraph 6 of the Office Action, which indicates that the Office Action is final, was included inadvertently in the text of the present Office Action.

II. Claim Rejections

The Examiner rejects claims 1, 8-10, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Marx et al (U.S. Patent 5,376,759), Japanese Unexamined Patent Application Publication H7-263871, and Crepeau (U.S. Patent 4,249,302). For at least the following reasons, Applicant respectfully traverses this rejection.

With respect to independent claims 1 and 10, Applicant submits that neither Marx, H7-263871, nor Crepeau, either alone or in combination, discloses, teaches or suggest all of the recitations of Applicant's new and unique claimed combinations. For example, as recited in independent claims 1 and 10, a substrate comprises surface layers which are kept to the ground potential and cover the surface of the substrate except the pads (a part of the circuit) and their narrow periphery. Accordingly, since the surface layers, as claimed, cover the surface of the substrate except the pads and their narrow periphery, even underneath an IC chip, it is possible to minimize electromagnetic emission from the circuit board.

On the other hand, Marx discloses a multiple layer printed circuit board 60 which has top and bottom outermost conductive layers 20 and 22. The top and bottom outermost conductive layers 20 and 22 are connected to an electrical ground potential. However, provision of the conductive layer 20 is excluded from the entire integrated circuit position 18. That is, the conductive layer 20 does not cover the area that is right under an integrated circuit that is

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mounted on the integrated circuit position 18. Thus, the circuit board of Marx cannot shield electromagnetic emission from the integrated circuit position 18. Furthermore, in Marx the electromagnetic emission from the integrated circuit position 18 deteriorates the operation of the integrated circuit that is mounted on the integrated circuit position 18. Thus, the primary reference, Marx, clearly does not disclose, teach, or suggest at least the surface layers of the claimed invention, which cover the surface of the substrate except pads (a part of the circuit) and their narrow periphery.

Moreover, the secondary reference, H7-263871, discloses ground layers on the surface and the side of the substrate. However, provision of the ground layer 12 on the surface around the circuit patterns 11 and the chips is excluded. Therefore, as with Marx, the H7-263871 reference also fails to disclose, teach, or suggest the surface layers of the claimed invention, and thus, does not make up for the deficiencies of Marx.

Crepeau discloses signal layers 14, 16, and 18 sandwiched between a component layer 12 and a bottom layer 20 when a multilayer printed circuit board 10 is fully assembled. Crepeau also discloses an inner power or ground layer 60 which is “assembled between any of the layers 12 through 20” (see col. 5, lines 49-50). Nowhere does Crepeau (or any of the cited references) teach or suggest forming its inner power or ground layer 60 on the top or the bottom surface. Thus, Crepeau does not disclose, teach, or suggest the surface layers as claimed in Applicant’s claims 1 and 10, and as such, does not make up for the acknowledged deficiencies of Marx and H7-263871.

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For at least the forgoing reasons, Applicant submits that any combination of Marx, H7-263871, and Crepeau would not disclose, teach, or suggest all of the recitations of the claimed invention in as complete detail as recited in the claims, and accordingly, requests the Examiner to withdraw the rejection of independent claims 1 and 10 (and dependent claims 8, 9, 17, and 18).

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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23373

CUSTOMER NUMBER

Date: August 21, 2003